WHAT IS CLAIMED IS:

1. A system for aligning two optical connectors, the system comprising:

a) a first connector having at least one optical component disposed therein, said first connector having opposite side walls, each side wall including a groove defined therealong;

b) a pair of alignment spheres each having a sphere center; and

c) a second connector having a planar front face and at least one optical component disposed therein, said second connector including a pair of recesses defined in said planar front face, said recesses being dimensioned to at least partially seat said alignment spheres such that each of said sphere centers is distanced from said planar front face so as to mechanically engage a corresponding groove defined within said side walls of said first connector.

2. The system of claim 1 wherein at least one of said grooves of the first connector is a longitudinal groove having a V-shaped cross section.

3. The system of claim 2 wherein the sphere center of each alignment sphere is disposed within a respective V-shaped groove.

4. The system of claim 1 wherein the sphere center of each alignment sphere is distanced from the plane of the front face of said second connector by a distance ranging from about 10 microns to about 250 microns.

5. The system of claim 1 wherein each of said recesses of said second connector is generally pyramidal in shape.

6. The system of claim 1 wherein the alignment sphere is fabricated from a material selected from the group consisting of steel, tungsten carbide, ceramic, glass and plastic.

7. The system of claim 1 wherein at least one of said first and second connectors includes a gradient index lens.

8. The system of claim 1 wherein at least one of said first and second connectors is fabricated from silicon.

9. The system of claim 1 wherein at least one of the first and second connectors is fabricated from single crystal silicon.

10. A system for aligning two optical connectors, the system comprising:

a) a first connector having at least one optical component disposed therein, said first connector having opposite side walls, each side wall including a longitudinal V-shaped groove defined therealong;

b) a pair of alignment spheres each having a sphere center; and

c) a second connector having a planar front face and at least one optical component disposed therein, said second connector including a pair of recesses defined in said planar front face, said recesses being dimensioned to at least partially seat said alignment spheres such that each of said sphere centers is distanced from said planar front face so as to

mechanically engage a corresponding V-shaped groove defined within said side walls of said first connector;

wherein at least one of the first and second connectors is fabricated from single crystal silicon and wherein at least one of said connectors includes first and second blocks, each block having a major surface in a (100) crystallographic plane, said major surface of the first block being joined to the major surface of the second block, said major surfaces of each block being etched to form at least one longitudinal groove for receiving an optical signal carrier.

11. A method for aligning two optical components, said method comprising the steps of:

a) providing a first connector having a planar front face and at least one optical component disposed therein and opposite side walls each including a groove;

b) providing a pair of alignment spheres each having a sphere center;

c) providing a second connector having a planar front face and at least one optical component disposed therein, said second connector including a pair of recesses defined in said planar front face, each of said

recesses being dimensioned to at least partially seat one of said alignment spheres;

d) seating each of said alignment spheres in a respective one of said recesses;

e) positioning the front planar face of said first connector alignment adjacent the front planar face of said second connector;

f) aligning each of said alignment spheres seated within said recesses with a corresponding groove defined within each side wall; and

g) engaging said alignment spheres with said grooves in a secure, wedge-like manner.

12. The method of claim 11 wherein the side walls of said first connector are V-shaped.

13. The method of claim 12 wherein the sphere center of each alignment sphere is disposed within a respective V-shaped side wall.

14. The method of claim 11 wherein the sphere center of each alignment sphere is distanced from the plane of the front face of said second connector by a

distance ranging from about 10 microns to about 250 microns.

15. The method of claim 11 wherein each of said recesses of said second connector is generally pyramidal in shape.

16. The method of claim 11 wherein the alignment sphere is fabricated from a material selected from the group consisting of steel, tungsten carbide, ceramic, glass and plastic.

17. The method of claim 11 wherein at least one of said first and second connectors includes a gradient index lens.

18. The method of claim 11 wherein at least one of said first and second connectors is fabricated from silicon.

19. The method of claim 11 wherein at least one of the first and second connectors is fabricated from single crystal silicon.

20. The method of claim 19 wherein at least one of said connectors includes first and second blocks, each block having a major surface in a (100) crystallographic plane, said major surface of the first block being joined to the major surface of the second block, said major surfaces of each block being etched to form at least one longitudinal groove for receiving an optical signal carrier.